

Applicant: Campagnolo et al.
Application No.: 10/690,042

REMARKS

The Amendment amends claims 1, 2, 5, 6, 7, 8, 9, 10, and 11; cancels claims 3 and 4; and adds claims 13-20. Claims 1, 2, and 5-20 are currently pending.

Rejection Under 35 U.S.C. 112

The Action rejected claim 10 as indefinite for the use of the term "continuously performed." The Amendment changes this to "repetitively performed" to clarify that steps are repeatable as part of the method.

Rejections Under 35 U.S.C. 102, 103

The Action rejected claims 1-9 and 12 as anticipated by U.S. Patent No. 6,676,549 to Fukuda. The Action rejected claim 11 over Fukuda in view of U.S. Patent 5,483,137 to Fey et al. Fukuda shows a sensor 18 that detects sensor elements 304 mounted within a ring around the hub 320. Fukuda discloses this ring as coaxial with sprockets mounted around the rear hub; movement of the chain between them is controlled by the rear derailleur. (Fukuda's sprockets are different from the toothed crowns mounted on the crank axle. Movement of the chain on these is controlled by the front derailleur.) Fey teaches an electrical chain transmission that prevents certain gearing choices from being made. This Reply discusses each claim, or set of claims, including the added claims, in turn.

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Claims 1, 2, and 13

Fukuda does not teach or suggest "a sensor that detects a marker that rotates about an axis parallel to an axis of rotation of the at least one sprocket, said marker having angular positions corresponding to no, forward, and rearward movement of the transmission chain" as recited in claim 1. Fukuda's sensor element 304 rotates about an axis coaxial with the axis of rotation the rear wheel and sprockets 28. Fukuda does not teach or suggest any other location for a sensor, and in fact, describes other sensor locations for other cycling uses in the Background (See Column 1, line 5), but dismisses those other locations as having many disadvantages (Col. 1, lines 23-35). Thus, Fukuda teaches away from sensor locations that are not coaxial with the axis of rotation of the rear wheel. Since Fukuda does not teach or suggest other locations for the sensors and markers that perform the claimed functions, claim 1 is believed to be patentable.

Fukuda does not teach or suggest what is recited in claim 13, "providing a chain tensioner that engages the transmission chain, wherein the chain tensioner comprises the sensor." Fukuda does not teach or suggest that a chain tensioner comprises the sensor, and thus claim 13 is believed to be patentable.

For these reasons, and because claim 2 depends from claim 1, claims 1, 2, and 13 are believed to be allowable.

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Claims 5-8 and 14

Similar to claims 1-4 and 13, amended claim 5 recites “at least one sensor that detects a marker that rotates about an axis parallel to an axis of a sprocket coaxial with a rear hub of a cycle wheel, said marker having angular positions corresponding to no, forward, and rearward movement of a transmission chain engaged to the sprocket” and claim 14 recites “a chain tensioner that engages the transmission chain, wherein the chain tensioner comprises the sensor.”

For these reasons, and because claims 6-8 depend from claim 5, claims 6-8 and 14 are believed to be allowable.

Claims 9, 10, and 15

Similar to claims 1-4 and 13, amended claim 9 recites the step of “detecting an angular position of the at least one gear sprocket by detecting a marker that rotates about an axis parallel to an axis of a hub of the rear wheel in response to the processing signal” and claim 15 recites “providing a chain tensioner that engages the transmission chain, wherein the chain tensioner comprises the sensor.”

For these reasons, and because claims 10¹ and 15 depend from claim 9, claims 10 and 15 are believed to be allowable.

¹ Claim 10 was not rejected over the references.

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Claims 11 and 16

Similar to claims 1-4 and 13, amended claim 11 recites a "at least one sensor that detects a marker that rotates about an axis parallel to an axis of a rear wheel hub, said marker having an angular position corresponding to the position of said at least one gear wheel for generating a respective signal" and claim 16 recites "a chain tensioner that engages the transmission chain, wherein the chain tensioner comprises the sensor."

For these reasons, and because claim 16 depends from claim 11, claims 11 and 16 are believed to be allowable.

Claim 12

Fukuda does not show or suggest the "sensor means for detecting the angular position of said at least one gear" that is recited in claim 12. Fukuda only shows a sensor element that rotates about the axis of the rotation of a sprocket; it shows no other location for its sensor element, and as discussed above, teaches away from other locations. Thus claim 12's sensing means that are disclosed in the application are not taught or suggested in Fukuda, and claim 12 is believed to be allowable.

Claims 17-20

Added claims 17-20 recite variations of the marker location on the crank axle of the bicycle. Fukuda does not teach or suggest such a location, and teaches that

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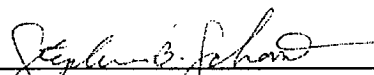
the only location of the sensor element is about an axis of rotation of the rear hub.
Thus, these claims are believed allowable over the prior art.

The claims have also been amended to add clarity and correct dependency.

For the above reasons, Applicant respectfully submits that the presently claimed invention is patentable over the prior art. Reconsideration and allowance of the claims is respectfully requested. If the Examiner believes that a telephone conference would advance the prosecution of this case, the undersigned invites such a call.

Respectfully submitted,

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